History

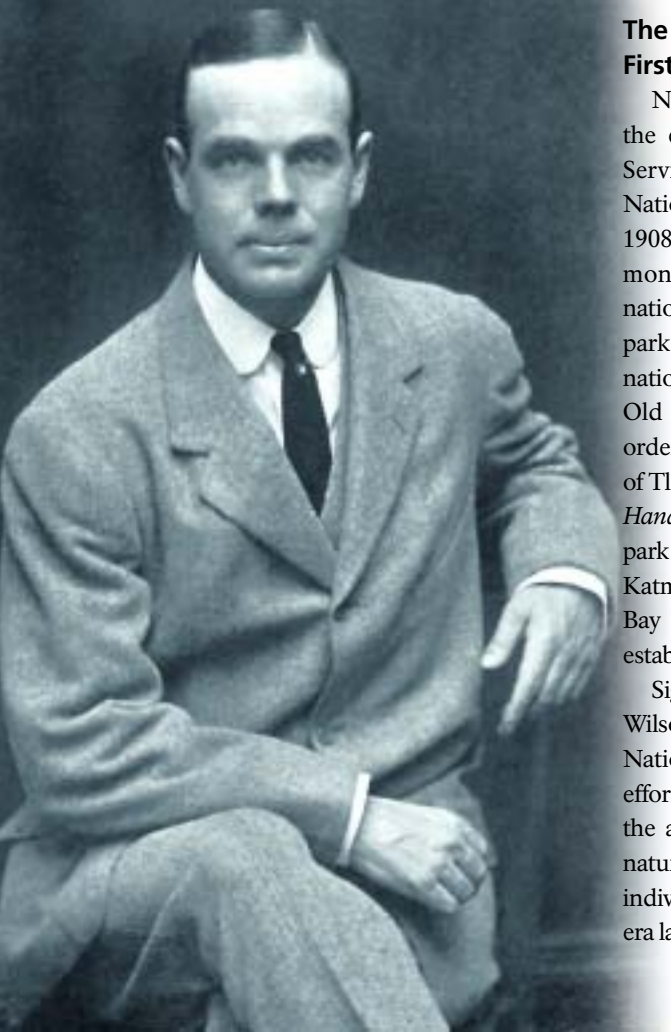
Arno Cammerer, NPS director from 1933 to 1940, made a series of key decisions in the long-running wolf-sheep controversy.

Photograph by Grant/Rinehart, file number WASO-D-713, 3942/3089, NPS Photo Collection, Harpers Ferry Center. National Park Service photograph

Biologist Victor Cahalane's month-long visit to Katmai in 1940 was the basis for his *Biological Survey of Katmai National Monument,* published in 1959.

Photograph by Allan Rinehart, NPS Photo Collection, Harpers Ferry Center.
National Park Service photograph

Charles Sheldon was the inspiration behind Mount McKinley National Park; he first visited the area in 1906 and retained a keen interest in the area until his death in 1928. From Sheldon's book, *The Wilderness of Denali.*



A History of Science in Alaska's National Parks

By Frank Norris

The Establishment of Alaska's First Parks, 1910-1925

National park units in Alaska precede the establishment of the National Park Service in 1916. The first park unit, Sitka National Monument, was conceived in 1908, and by the mid-1920s four national monuments along with Alaska's first national park were part of the growing park system. Two small, historically-based national monuments—Sitka (1910) and Old Kasaan (1916)—were established in order to preserve remarkable assemblages of Tlingit and Haida artifacts *(Antonson and Hanable 1987, Norris 2000)*. The other three park units, Mount McKinley National Park, Katmai National Monument, and Glacier Bay National Monument, however, were established in the name of science.

Signed into law by President Woodrow Wilson in February 1917, Mount McKinley National Park was largely the result of efforts by Charles Sheldon, who first visited the area in 1906. Sheldon was a hunter-naturalist, one of several public-spirited individuals who helped set Progressive-era land management policy. These wealthy easterners typically combined their love of hunting and other outdoor sports with a broad concern for the protection of wildlife and fish populations *(Brown 1991)*. Sheldon was concerned about North America's Dall sheep populations, so he decided to visit their habitat, north of the Alaska Range, in order to study their distribution, habits, and migratory patterns *(Brown 1991)*. Though Sheldon loved to hunt, he was primarily a scientist. As Theodore Roosevelt noted in a 1911 book review, *…the most important part of Mr. Sheldon's book is that which relates not to hunting but to natural history. No professional biologist has worked out the problems connected with these Northern mountain sheep as he has done. … still more notable is his description of the life history of the sheep… (Brown 1991:76).*

And as a fulfillment of Sheldon's wishes, the park's purpose includes "the preservation of animals, birds, and fish and… the preservation of the natural curiosities and scenic beauties thereof."

After two extended expeditions to these gamelands, in the summer of 1906 and between August 1907 and June 1908, Sheldon began to lobby agency officials and legislative leaders for the establishment of a "Denali National Park" in 1915. When asked to draw the boundaries of the proposed park, he took pains to include all areas within "the limits of the caribou run" *(Kauffman 1954:3)*. And as a fulfillment of Sheldon's wishes, the park's purpose includes "the preservation of animals, birds, and fish and… the preservation of the natural curiosities and scenic beauties thereof." *(Alaska Planning Group 1974c:558ff)*.

Shortly afterward, Interior Department officials undertook a series of activities that brought forth another large park unit, Katmai National Monument. A large area in southwestern Alaska had literally exploded into prominence in June 1912 with the eruption of an enormous volcano, popularly thought to be Mount Katmai *(Hussey 1971)*. (Only much later, in 1954, did a scientific party reveal that the actual eruption site was Novarupta, a side vent located six miles west of Mount Katmai.) Not surprisingly, the eruption aroused the curiosity of many in the scientific commu-

Photograph courtesy of University of Alaska Anchorage

Baked Mountain Camp with Mount Martin in the background, 1919.
UAA Archives and Manuscripts Department, National Geographic Society Katmai Expeditions Collection, Box 5, 6061.

nity, and before the end of June, the National Geographic Society (NGS) asked George C. Martin, a U.S. Geological Survey geologist, to travel to the area as part of a long-term volcanic study. However, Martin made it only as far as Katmai's eastern coastline.

The NGS board of directors, not to be dissuaded, then contacted Robert F. Griggs, an Ohio State University botanist. Griggs had recently botanized on Kodiak Island, and with NGS sponsorship, he traveled to Katmai in 1915, though the team was turned back by poorly-consolidated ash deposits and vast debris clouds *(Hussey 1971)*. The following year, Griggs returned to the area. Before reaching Katmai Pass, he "caught sight of a tiny puff of vapor" —a fumarole or steam jet. Intrigued, he climbed a nearby hillock for a better look, and *…there, stretching as far as the eye could reach…were hundreds—no, thousands—of little volcanoes like those we had just examined…Many of them were sending up columns of steam which rose a thousand feet before dissolving (Griggs 1922:63)*.

Griggs was understandably excited by the discovery, but a change in the weather forced a quick retreat. So in 1917, Griggs returned with a ten-man scientific party and spent about a month in the "Valley of Ten Thousand Smokes" gathering geological, chemical, and biological data. The information that they gathered, like that from the two previous years' explorations, was reported in the Society's popular magazine *(Hussey 1971)*.

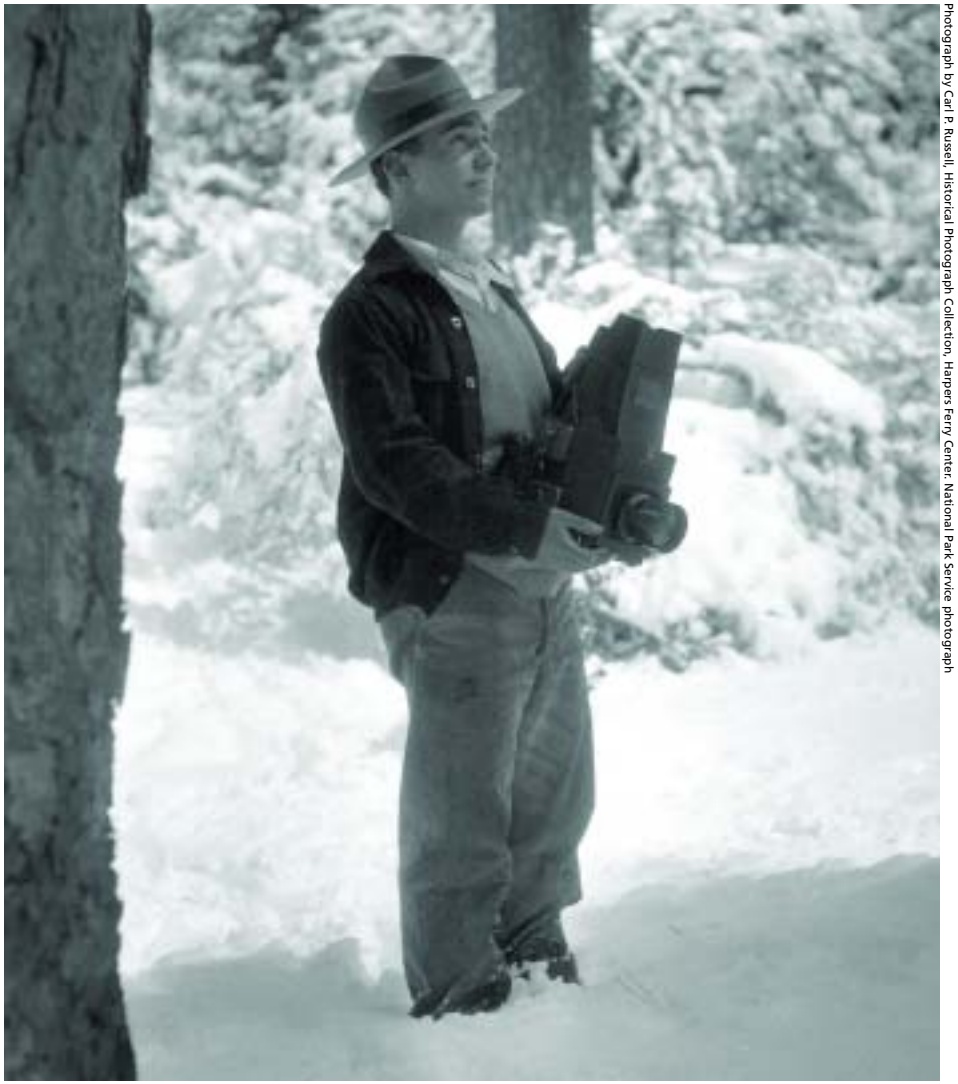
Griggs was well aware that the "thousands of little volcanoes" had enormous potential for tourists, and after his 1917 trip he wrote that it was "one of the greatest wonders of the world, if not indeed the very greatest of all the wonders on the face of the earth" *(Hussey 1971:406)*. Griggs's reports helped convince the National Geographic Society to encourage protection for the area. With the support of Interior Secretary Franklin Lane and Horace Albright of the National Park Service (NPS), a proclamation was written and forwarded to President Wilson, who signed Katmai National Monument into law on September 24, 1918 *(Norris 1996)*.

Although Glacier Bay National Monument was not designated until 1925, scientists had been interested in the bay since 1879, when naturalist and advocate John Muir had made the first of several visits. Scientists in Muir's wake included professors George F. Wright (1886), Harry F. Reid (1890 and 1892), and a coterie of experts on the E.H. Harriman expedition (1899). But on September 10, 1899, a major earthquake shattered the face of Muir Glacier and brought an abrupt end to Glacier Bay tourism *(Norris 1985, Catton 1995)*. Few non-Natives visited the bay in the years that followed, but in 1916 a young University of Minnesota ecology professor, William S. Cooper, arrived in the bay. In hopes of making a longitudinal study of changing soil and plant composition, he established a series of one-meter quadrats at varying distances from many of the bay's glaciers *(Catton 1995)*.

Those quadrats anchored a lifetime of glaciological investigation. Equally important, Cooper's visit set into motion a series of events that resulted in the area's 1924 withdrawal and, the following year, its reservation as a national monument. The proclamation made it clear that the monument's primary purpose was scientific; it stated that the area "presents a unique opportunity for the scientific

Robert Howe Collection, photo GB 184. National Park Service photograph

William S. Cooper, (on right) seen here with author Dave Bohn during the 1960s, worked in Glacier Bay starting in 1916. His 1922 speech to the Ecological Society of America started the process that resulted in the bay's designation as a national monument.



Photograph by Carl P. Russell, Historical Photograph Collection, Harpers Ferry Center, National Park Service photograph

George Wright, one of the NPS's first notable scientists, spent two months at Mount McKinley National Park in 1926 collecting mammal and bird specimens.

study of glacial behavior and of resulting movements and development of flora and fauna and of certain valuable relics of ancient interglacial forests" *(Catton 1995:325)*.

Scientific Research in Alaska's Parklands, 1925-1971

During the 40 plus years between the establishment of Glacier Bay National Monument and the passage of the Alaska Native Claims Settlement Act of 1971, no new NPS units were established in Alaska *(Norris 2000)*. In fact, the number of NPS units during this period actually decreased, since Congress removed Old Kassan's designation in 1955. All three of the territory's large units, however, had acreage added. Some of the scientific work performed during this period was done in conjunction with potential or actual boundary expansions, but other work was performed in the support of more generalized natural resource management.

At Mount McKinley National Park, government scientists arrived just a year after the superintendent. In the spring of 1922, a young assistant biologist with the U.S. Biological Survey, Olaus J. Murie, arrived in hopes "of capturing young bull caribou" *(SMR June 1922)*. Later that summer he and a crew built a corral for that purpose at the head of the Savage River valley *(SMR October 1922)*. The corral was used for only a short time, but by the end of the year he had inveigled his brother, biologist Adolph Murie, to return to the park with him. Three years later, Olaus Murie compiled the first classification of the park's flora, fauna, and natural phenomena *(SMR December 1925)*. In 1926, biologists Joseph M. Dixon and George M. Wright spent the summer there "collecting specimens of this park's mammal life" *(SMR July 1926:6)*. Wright, to his credit, was also the first person to discover the nest and eggs of the surf bird, for which scientists had been searching for more than 150 years *(SMR February 1936)*.

In addition to observations by professionals, park rangers at Mount McKinley were asked to make general comments on the number, distribution, and condition of the park's fauna; as a result, monthly government reports provide almost a half-century of observations and inventories of the park's mammals, birds, and plant life and even measurements of the major glaciers.

Much of the scientific attention directed at the park during the 1930s and 1940s pertained to the wolf-sheep controversy. Local sentiment in those days strongly favored killing all wolves and coyotes, and at first, park rangers went along, killing predators from time to time *(Rawson 2001)*. Biologist Joseph Dixon, dispatched to the park in 1932 to ascertain why so many sheep had been lost the previous winter, had a simple solution; he "suggested that the rangers make a little more effort to kill off some of the wolves and coyotes" *(SMR June 1932:3)*. Although the Wildlife Division in Washington, D.C. urged the cessation of all wolf control programs, control efforts were not halted until 1935 by Arno Cammerer, the new director of the NPS. That decision resulted in a strong wave of protest, both from Alaskans and from hunting and conservation groups *(Rawson 2001)*. Just a year later, in fact, he was forced to recant his policy, and from 1936 through 1938 rangers assigned to "springtime predator control" harvested 14 wolves. A year later, NPS officials asked Adolph Murie to return to the park to study its predators and their relation to other wildlife in the park *(Rawson 2001, SMR April 1939)*. Murie spent much of the next three years on his wolf-sheep study, and the product of his efforts, *The Wolves of Mount McKinley*, was published in 1944 *(SMR May-September*

1940, SMR May-July 1941). Murie continued his work, and worked there almost every year until 1970. During those years he conducted sheep and caribou studies, wrote generalized studies about the park's mammals and birds, and penned monographs on the park's bear, wolverine, and small-mammal populations *(NPS 1973, Rawson 2001)*.

Some of the scientific work at the other park units during this period was done as part of proposed boundary studies. At Katmai National Monument, the huge boundary expansion of 1931 took place just a year after Robert F. Griggs made an extended visit. Griggs made further observations about plant succession, particularly on the margins of the Valley of Ten Thousand Smokes, and he also appraised the brown bear habitat in areas north and west of the existing monument. Shortly after returning from the area, Griggs recommended the expansion of Katmai's boundaries, primarily to ensure high quality bear habitat. The presidential proclamation that President Herbert Hoover signed on April 24, 1931, more than doubled Katmai's acreage *(Norris 1996)*.

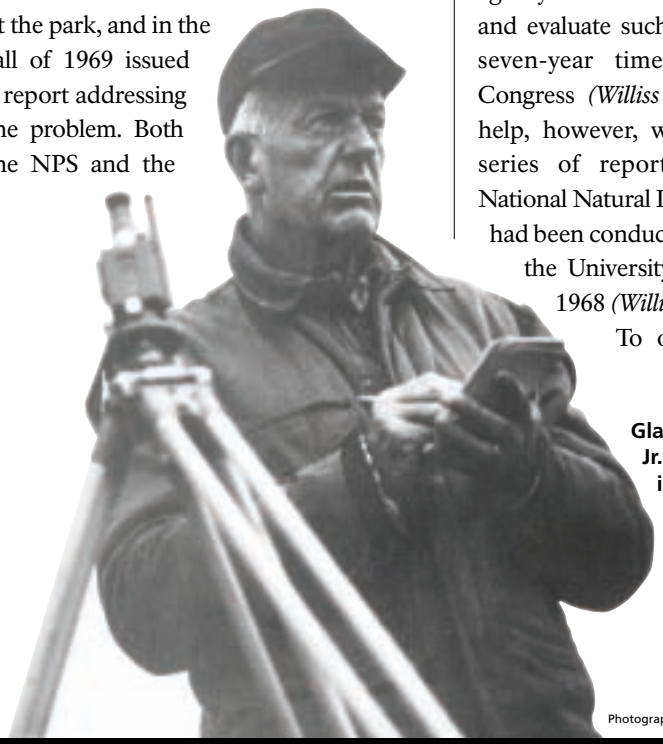
At Glacier Bay National Monument, the major scientific presence during this period was Dr. William O. Field, Jr. A young Harvard glaciologist, Field first visited the bay in 1926 and returned every few years for another half century. Because of his work, the NPS learned much about the monument's resources. The agency also sent Joseph Dixon, a wildlife biologist, to the monument in 1932, and six years later, Dixon returned with NPS chief forester John D. Coffman. Both visits were aimed at collecting bear habitat data, and both had an ulterior motive: the possible expansion of the monument's boundaries. Based on their research, on April 18, 1939, President Franklin Roosevelt signed into law a major addition to the monument *(Catton 1995)*.

NPS photograph, Denali National Park & Preserve Historical Collection

Mount McKinley's museum opened in 1943. Here, visitors for years afterward learned about the park's natural and human history.

During the early 1950s, NPS officials organized the Katmai Project, an interdisciplinary effort funded primarily by the Defense Department. Scientists from universities and public agencies fanned out across the monument and produced a series of papers related to geology, mammalogy, parasitology, entomology, archeology, and similar fields. It was at this time that scientists discovered that Novarupta, not Mount Katmai, had erupted in 1912; another key contribution was Victor Cahalane's biological survey *(Norris 1996)*.

During the mid-1960s, Katmai research was focused at Baked Mountain, within the Valley of Ten Thousand Smokes. Here, the University of Alaska Geophysical Institute commenced seismic and volcanic investigations, and researchers collected data each summer from 1965 to 1977 *(Norris 1996)*. Katmai was also the scene of ground-breaking bear research. Responding to a 1966 incident in which a bear injured a sleeping camper, the agency asked Dr. Frederick Dean, a University of Alaska wildlife biologist, to investigate human-bear relationships in the area. Dean spent portions of three summers at the park, and in the fall of 1969 issued a report addressing the problem. Both the NPS and the concessioner accepted the suggestions, and the number of bear-human incidents diminished *(Norris 1996)*.



Photograph by Dave Bohn

Glaciologist William O. Field, Jr. first visited Glacier Bay in 1926. He returned, at intermittent intervals, for decades afterwards.

Science and the Formulation of New Park Proposals, 1971-1975

The National Park Service entered a new era in December 1971, when President Richard Nixon signed the Alaska Native Claims Settlement Act (ANCSA). Section 17(d)(2) of the act gave the Interior Secretary the authority to withdraw up to 80 million acres "suitable for addition to or creation as" national parks and other conservation areas *(Williss 1985:89-92)*. The NPS reacted to ANCSA by commencing a wild scramble to study Alaska's unreserved public lands, with an eye toward proposing appropriate acreage as parklands. The agency was woefully unprepared to study and evaluate such a large area within the seven-year time frame mandated by Congress *(Williss 1985)*. Of considerable help, however, was a recently-compiled series of reports evaluating potential National Natural Landmarks. These studies had been conducted under the auspices of the University of Alaska in 1967 and 1968 *(Williss 1985)*.

To overcome its ignorance

about other resources, the Park Service dispatched a broad range of personnel into the field in 1972 and 1973, which resulted in numerous environmental impact statements for proposed park lands. In almost every proposal, a primary purpose for protecting an area was its potential for scientific study and analysis. A purpose for the Chukchi-Imuruk (Bering Land Bridge) proposal, for example, was the "provision of opportunities for non-manipulative baseline research on essentially undisturbed representative arctic tundra and coastal ecosystems" *(Alaska Planning Group 1974b:5)*. The Cape Krusenstern proposal called for the NPS to "preserve, scientifically investigate, and interpret the nationally significant archeological remains [and] the geological and biological features of the area," and the Wrangell-St. Elias proposal called for "research and related educational opportunities in northern ecosystems" *(Alaska Planning Group 1974a:1, 1974d:8)*.

NPS Photo Collection, Harpers Ferry Center, neg. 66-182. National Park Service photograph

In 1953 and 1954, several agencies collaborated on the Katmai Project, which brought a diverse group of scientists to the monument. Included in this photo are (front row, left to right) Dr. Rolf Juhle (Johns Hopkins), William F. Thompson (U.S. Army), and Dr. John Lucke (Univ. of Connecticut); (back row) a mechanic, the pilot, and Everett Schiller (Public Health Service).

The CPSU and the Refinement of Park Proposals, 1975-1980

After the completion of the environmental statements for the proposed park areas, both agency professionals and Congress knew that more information was needed to assess their viability. To provide that information, the Interior Department officials tapped the Cooperative Park Studies Unit (CPSU), the University of Alaska Fairbanks-based program that had been in place since 1972. The CPSU consisted of two programs: a Biology and Resource Management Program, chaired by wildlife management professor Frederick Dean, and an Anthropology and Historic Preservation Program, headed by anthropologist Zorro Bradley *(Williss 1985)*.

By the end of 1973, CPSU's natural resource component was handling contracts related to visitation at Gates of the Arctic, biological diversity at Chukchi-Imuruk, and a biological survey of a proposed addition to Glacier Bay National Monument. Later that decade, Dean's program continued its work and churned out reports on geomorphology, climate, limnology, biology, wildlife management, and zoology *(Williss 1985)*.

NPS photograph by Victor Cahalane, neg. 11,922. Harpers Ferry Center

One of the major findings of the 1953-54 Katmai Project was that Novarupta Volcano, not Mount Katmai, was the primary site of the 1912 volcanic eruption.

The cultural resource component first contracted large-area studies under this program in 1974. The first study, of traditional Eskimo life in the proposed Kobuk Valley National Park area, was written by Richard Nelson, Ray Bane, and Douglas Anderson. Following in its wake were subsistence studies of the Aniakchak, Yukon-Charley Rivers, and Gates of the Arctic areas; and by the early 1980s, similar studies had been completed for virtually all of the remaining new or expanded park units *(Williss 1985)*.

Given the results of the many CPSU studies, as well as the efforts of agency personnel, Congress was able to substantially benefit from scientific expertise during its deliberations over the evolving Alaska lands bill. And, perhaps as a result, the Alaska National Interest Lands Conservation Act—passed by Congress in November 1980 and signed by President Jimmy Carter

Photograph courtesy of Zorro Bradley

Zorro Bradley (pictured), an NPS anthropologist, and Fred Dean, a longtime biology professor, ran the University of Alaska's Cooperative Park Studies Unit during the 1970s and early 1980s.

a month later—was laden with scientific references. Of the thirteen new or expanded park units included in ANILCA, five offered specific language calling for future study or research (and for Noatak, it called for a "board consisting of scientists and other experts in the field of arctic research" to be established), while for the remaining units, Congress underscored the need for continued scientific investigation when it called for all units established by the act "to maintain opportunities for scientific research and undisturbed ecosystems" *(Public Law 96-487)*. Science has continued to be a dominant theme in Alaska's parks in the quarter century that has followed ANILCA's passage.

REFERENCES

Alaska Planning Group. 1974a. *Cape Krusenstern National Monument, Final Environmental Statement.* U.S. Department of Interior. Washington, D.C.

Alaska Planning Group. 1974b. *Chukchi-Imuruk National Reserve, Final Environmental Statement.* U.S. Department of Interior. Washington, D.C.

Alaska Planning Group. 1974c. *Mount McKinley Additions, Final Environmental Statement.* U.S. Department of Interior. Washington, D.C.

Alaska Planning Group. 1974d. *Wrangell-St. Elias National Park, Final Environmental Statement.* U.S. Department of Interior. Washington, D.C.

Antonson, Joan M., and William S. Hanable. 1987. *Administrative History of Sitka National Historical Park.* National Park Service. Anchorage, Alaska.

Brown, William E. 1991. *A History of the Denali-Mount McKinley Region, Alaska.* National Park Service. Santa Fe, New Mexico.

Catton, Theodore.1995. *Land Reborn; A History of Administration and Visitor Use in Glacier Bay National Park and Preserve.* National Park Service. Anchorage, Alaska.

Griggs, Robert F. 1922. *Valley of Ten Thousand Smokes.* National Geographic Society. Washington, D.C.

Hussey, John A. 1971. *Embattled Katmai: a History of Katmai National Monument.* National Park Service. San Francisco, California

Kauffmann, John M. 1954. *Mount McKinley National Park, Alaska: A History of its Establishment and Revision of its Boundaries.* National Park Service. Washington, D.C.

Murie, Adolph. 1944. *The Wolves of Mount McKinley.* Government Printing Office. Washington, D.C.

National Park Service. 1973. *Mount McKinley National Park Bibliography.* Unpublished manuscript.

Norris, Frank. 1985. *Gawking at the Midnight Sun: The Tourist in Early Alaska.* Alaska Historical Commission Studies in History, No. 170. Anchorage, Alaska.

Norris, Frank. 1996. *Isolated Paradise; An Administrative History of the Katmai and Aniakchak National Park Units.* National Park Service. Anchorage, Alaska.

Norris, Frank. 2000. *A Victim of Nature and Bureaucracy: The Short, Sad History of Old Kasaan National Monument.* In *Proceedings of the Alaska Historical Society Annual Meeting.* pp. 87, 89.

Public Law 96-487. 1980. *Alaska National Interest Lands Conservation Act* (94 Stat. 2371). Sections 101(b), 201, and 202.

Rawson, Timothy. 2001. *Changing Tracks; Predators and Politics in Mt. McKinley National Park.* University of Alaska Press. Fairbanks, Alaska.

Superintendent's Monthly Report (SMR), Mount McKinley National Park. 1922-1941. Unpublished reports held at Denali National Park and Preserve.

Williss, G. Frank. 1985. *Do Things Right the First Time: The National Park Service and the Alaska National Interest Lands Conservation Act of 1980.* National Park Service. Denver, Colorado.